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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/628,296	07/28/2003	Lian-Chao Li	P06331US01	4176

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801 GRAND AVENUE, SUITE 3200  
DES MOINES, IA 50309-2721

EXAMINER

KUMAR, VINOD

ART UNIT	PAPER NUMBER
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1638

DATE MAILED: 01/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/628,296

Applicant(s)

LI ET AL.

Examiner

Vinod Kumar

Art Unit

1638

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-29 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Election/Restrictions*

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-5, 10-12, 22 and 24-29 drawn to an isolated nucleic acid molecule comprising a polynucleotide, a recombinant expression cassette, a vector or a host cell comprising said polynucleotide, or a method of modifying cell walls in the tissues of a transgenic plant comprising introducing said polynucleotide sequence into plant, classified in 800, subclass 278, for example.
- II. Claims 8 and 23 drawn to an isolated polypeptide or a method of weakening the mechanical strength of cellulose fibers using said polypeptide, classified in class 530, subclass 350, for example.
- III. Claim 9 drawn to an antibody which selectively binds to the polypeptide, classified, in class 424, subclass 130.1, for example.
- IV. Claims 6, 7 and 13-21, drawn to a group 2/3 allergen encoding a polypeptide, or wherein said allergen is Lol p3 or wherein said allergen possesses expansin activity, classified in class 536, subclass 23.2, for example.

Inventions of Group I and Groups II-III are patentably distinct. The polynucleotide of Group I is composed of purine and pyrimidine units, and polypeptide of Group II or antibody of Group III is made up of amino acids. These are structurally distinct molecules; any relationship between a polynucleotide and polypeptide is

Art Unit: 1638

dependent upon the information provided by the nucleic acid sequence open reading frame as it corresponds to the primary amino acid sequence of the encoded polypeptide. In addition, the information provided by the polynucleotide of Group I can be used to make a materially different polypeptide than that of Group II or different antibody of Group III. In addition, while a polypeptide of Group II or the polypeptide required for generating an antibody of Group III can be made by methods using some, but not all, of the polynucleotide fall within the scope of Group I, it can be also obtained from a natural source using biochemical procedures. Due to these reasons, inventions of Group I and Groups II-III are patentably distinct.

Furthermore, searching the inventions of Group I and Groups II-III together would impose a serious search burden. In the instant case, the search for the polynucleotide of Group I will require searching large number of databases for polynucleotide that encode protein with expansin activity, whereas search for polypeptide of Group II will require searching for proteins that weakens the mechanical strength of cellulose fiber. Likewise search for the antibody of Group III will require searching large number of antibodies exhibiting similar cross reactivity as the antibody of Group III. Thus search for polynucleotide of Group I, and polypeptide of Group II and antibody of Group III are not coextensive. The inventions of Group I and Groups II-III have separate status in the art as shown by different classifications.

Inventions I and IV are patentably distinct. The invention of Group I requires a transgenic plant expressing a transgenic protein that modifies cell wall composition, whereas invention of Group IV is a group of allergen encoding for a polypeptide with expansin activity and does not require a transgenic plant.

Furthermore, searching the inventions of Group I and Group IV together would impose a serious search burden. In the instant case, the search for transgenic plant of Group I will require art search pertaining to transgenic plants expressing cell wall modifying genes, whereas search for the invention of Group IV will include searching for a group 2/3 allergen encoding a protein with expansin activity. Thus the search for the inventions of Group I and Group IV are not coextensive.

Inventions II and III are patentably distinct. The invention of Group II is a polypeptide that can either be naturally produced using biochemical procedures or recovered from a host cell over-expressing said polypeptide. Besides, polypeptide of Group II is associated with cell wall modifying activity. The invention of Group III is an antibody that is raised against a specific protein and used in detecting the levels of a specific protein through antigen antibody binding reaction. The polypeptide of Group II and the antibody of Group III are structurally distinct molecules; any relationship between a polypeptide of Group II and an antibody of Group III is dependent upon the correlation between the scope of the polypeptides that the antibody binds and the scope of the antibodies that would be generated upon immunization with the polypeptide.

The search for polypeptide of Group II will require searching for proteins that weakens the mechanical strength of cellulose fiber, whereas search for the antibody of Group III will require searching large number of antibodies exhibiting similar cross reactivity as the antibody of Group III. Thus technical literature search for polypeptide of Group II and antibody of Group III are not coextensive. The inventions of Group II and Group III have separate status in the art as shown by different classifications.

The invention of Group II and Group IV are patentably distinct. The invention of Group II requires a polypeptide and a transgenic plant expressing said polypeptide involved in modifying cell wall composition, whereas the invention of Group IV does not require a transgenic plant to produce a group 2/3 allergen encoding a polypeptide with expansin activity.

The search for polypeptide of Group II will require searching for proteins that weakens the mechanical strength of cellulose fiber, whereas search for the invention of Group IV will include searching for a group 2/3 allergen encoding a protein with expansin activity. Thus the search for the inventions of Group II and Group IV are not coextensive. The inventions of Group II and Group IV have separate status in the art as shown by different classifications.

The invention of Group III and Group IV are patentably distinct. The invention of Group III is an antibody that is raised against a specific protein and used in detecting the levels of a specific protein through antigen antibody binding reaction, whereas invention of Group IV is a group of allergen encoding for a polypeptide with expansin activity and does not require an antibody.

Furthermore, search for the antibody of Group III will require searching large number of antibodies exhibiting similar cross reactivity as the antibody of Group III, whereas search for the invention of Group IV will include searching for a group 2/3 allergen encoding a protein with expansin activity. Thus the search for the inventions of Group III and Group IV are not coextensive. The inventions of Group III and Group IV have separate status in the art as shown by different classifications.


Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vinod Kumar whose telephone number is (571) 272-4445. The examiner can normally be reached on 8.30 a.m. to 5.00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached on (571) 272-0975. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



ASHWIN D. BHATTA, PH.D.  
PRIMARY EXAMINER